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Research findings at the Center for the Study of Higher Education, University of California, Berkeley, reveal that adequate data for meaningful research on talented women are unavailable. The findings also imply that (1) the most talented and creative college women apparently leave colleges in which they first enrolled before the end of four years, and (2) potentially talented college women limit their goals because of predominantly male-oriented educational environments. Research guidelines are included which focus on more effective identification and education of students who possess either special talents, superior ability, or both, in order to arrive at methods for promoting optimum individual development during a time span ranging from early pre-adolescent years through mature adulthood. Specific study possibilities are suggested with emphasis on problem areas in a variety of research situations. Approaches to existing data resources, as well as new sources for meaningful data collection, are proposed. (WM)

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RESEARCH ON TALENTED WOMEN: PROBLEMS OF APPROPRIATE AND ADEQUATE SOURCES OF DATA[1]

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Paul A. Heist

Introduction

It seems appropriate to preface my remarks with a brief description of the frame-of-reference that I bring to the topic of "research on the education of talented women." My present perspective is determined, to a great degree, by some of the findings from a long range study on college students presently being completed at the Center for the Study of Higher Education in Berkeley. I mention this, in introduction, since I will later be addressing myself to education at the college level as a natural and logical area for the study of talent.

One implication that can be drawn from the findings mentioned is that significant, meaningful research on talented women, leading to decisive answers and generalizations, is difficult to execute and the "telling" data are not readily obtained. One of the simplest reasons for this, among a number, is that the college women identified as the most talented and the most creative are frequently no longer around at the end of four years of college. At least they are not in the school of their initial enrollment. Consequently, one is not able to complete the essential post-assessment for many subjects. The talented students that do remain to complete a degree have,

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1. In Talented Women and the American College: Needed Research on Able Women in Honors Programs, College and Society, (Conference Proceedings) Inter-University Committee on the Superior Student, Boulder, University of Colorado, 1964

with few exceptions, been receiving an education in institutions that tend not to further the identifiable talents or creative potential of the students.[1] An exception to the latter point is, of course, found in academic achievement, but it can be sincerely questioned how much in the way of special talents is usually involved in this kind of attainment. Thus, in brief, the educational setting, seemingly a natural place to study the development of talent, has not facilitated the adequate collection of important information. In further research, this concern will demand some attention regarding the choice of particular schools, in order to study a full range of talent and ability, and some attention to program and procedures within schools, to make certain that a larger proportion of the most exceptional persons remain to graduate.

A second implication from the general findings of the studies to date, which supplements my present frame-of-reference, is centered in the social context in which most young women receive an education. It seems like calling attention to the obvious to state that an education for most students is obtained in a heterosexual setting and seemingly naive to point out that this is the reality of our total existence. But, the point to be made briefly is that the education of talented women, and less talented women for that matter, is attempted, even in the present day, in a heterosexual but predominantly male world. In numerous ways, according to the information obtained from

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2. Some will object to this statement and call attention to the great number of institutions that are stressing literature, the arts and dance in the curriculum for women. The reply to this conjecture is to ask about the evidence which would indicate that such special training has any effective carry-over in the lives of 90 to 95 per cent who received it, or about the carry-over value of much of the rest of the curricular experiences, for that matter, whatever the ability and talent of the young women.

women interviewees on various campuses, much of their thinking, motivation and aspirations are too much oriented around the males immediately present and by their anticipation of an existence with a male or males in their future. This takes on a negative connotation as it implies limited horizons, uncertain objectives, a constrained way-of-life, and too little personal freedom of operation. For the majority, the possibilities of an optimum education become even more curtailed as women students reach the last two years in college. (This conclusion is also substantiated by the research findings of Esther Matthews.)[3]

A second aspect of this heterosexual, social context is centered in the male students perception of women of their own age and their way of accepting them. A mass of college men have a perspective of the coeds that isn't far removed from that of the military man. This can most tactfully be presented by saying that women per se are seen as the second sex, not too unlike the perception of minority groups as viewed by a prevailing majority. This matter of not quite or never "being" an equal becomes part of the perceived inhibiting environment in which a young woman's behavior and development is always somewhat bounded by how she is seen and received, as a group member, or how she thinks she and other women are seen and received.

Research at the college level has also led us to question the completeness of our frames-of-reference for assessing and evaluating certain student behavior and attainments. Upon taking a second and third look at the criteria

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3. Matthews, Esther. The Marriage-Career Conflict in the Career Development of Girls and Young Women. Unpublished doctoral dissertation, Harvard University 1960.

or standards of achievement we find that they appear to have a masculine bias and may often be inappropriately applied to women, especially since the aspirations and objectives, not to overlook the emotional make-up, of the two sexes are dissimilar. There is reason to believe that this fact may be as damaging to the fruition of talent in innovative, imaginative women as is the matter of not identifying or never becoming aware of students' strengths and potentials.

A second aspect of this concern about criteria centers in the quality of achievement determined by male behavior as the naturally assumed standard of goodness. There is ample reason to question that most gifted or talented males are performing at their potential level of competence or that they are being educated to use their talent. On this basis, research on the topic demands a more careful look at the identifying characteristics of talent and at the matter of relevant performance criteria.

An Orientation to Guide the Collection of Essential Data

Presumably most educators have some common understanding of what is meant when we speak of studying and educating talented, gifted and creative persons. And a number may be so bold as to indicate that they are capable of distinguishing among the specific characteristics of persons described by these three terms. Actually the differences are as often a matter of definition as of fact, and they are not an uppermost consideration here. The <u>general</u> point is the identification and education of students and adults who possess either special talents or superior ability or both. The orientation here will include an approach to questions and to sources of data that apply to studying all exceptional women.

What are the blueprints, if any, or what are the guidelines for studying

the talented so that we may arrive at information and data fundamental to promoting their optimum education, their contributions to society and their own welfare?

For purposes of easy communication, the "guidelines" have been placed in the form of questions. The underlying focus is the possible effectiveness of college experiences in bringing potential talent to a state of fruition or realization, whether immediately or eventually. This bounding by the college years may be seen as too specific and limiting, and as the questions will indicate, any search for adequate answers will demand going beyond this post-adolescent period. In this vein, the context of honors programs would likewise be an insufficient setting for research on the talented. Even if the criteria for selection or admissions into an honors program resulted only in a highly superior or talented group, an investigation of the "true" effectiveness of programs and experience would have to extend beyond honors work and the college years. In this sense it is very advisable that educators and researchers become cognizant of the pre-college lives and backgrounds of students and, more important, also study, at a later date, the eventual activities and pursuits of those having experienced a particular approach or curriculum. Thus, we are introducing and indirectly making a plea for long-range or longitudinal studies as an important "design" consideration in investigations of talented people.

The questions are presented in outline form, subdivided under the terms "general" and "subsidiary." They are chiefly illustrative, not to be construed as all inclusive of the many points and considerations relevant to the topic. The two general questions are non-temporal in that they apply to any time in life sequence, from the early pre-adolescent years to mature adulthood.

A. General Questions

1. What general factors or circumstances, presumably affecting the majority of women, facilitate or prevent the attainment of satisfactory levels of achievement and contributive involvement for (most) talented women in our society?

2. What specific factors facilitate or prevent the attainment of satisfactory levels of achievement and contributive involvement for the individual woman of ability and talent or certain types of talented women?

B. Some Subsidiairy Questions

1. What are the characteristics and orientations acquired in the pre-college years that serve as pre-determinants of aspirations, social and occupational directions, and general development and also facilitate the expression and utilization of talent and creative potential?

2. What are the significant pre-college experiences and what are the essential stages, if any, in psychological development that predispose the later expression of ability and talent?

3. What are the variations in educational records and the patterns of realization for the students identified as talented - during the college years? - in the post-college years?

   a. How do different colleges compare in their education of women of high ability and talent?

   b. How do colleges compare in their attempts to effectively educate different types of talented women (e.g., those with musical talent compared with those possessing exceptional quantitative ability)?

c. What is the impact of different (selected) experiences for talented women within any college (e.g., the effect of honors work, independent study, or course work in the humanities or creative arts)?

d. What percentage of talented women never complete the requirements for a college degree and how does this affect their future activities and attainments?

4. What are the variations in educational records (e.g., in the way of continuing education) and patterns of realization in the post-college years for talented women students who withdraw from college and do not complete the requirements for an undergraduate degree?

5. How do the attitudes, interests and activities of college women graduates with talent compare with those of the less talented three, five and ten years beyond graduation?

The Collection of Pertinent Data

The method of data collection and the type of information to be obtained should be coordinate with the philosophy and objectives of a program, as must be the actual questions derived from the objectives. The questions asked, the means of collecting information, and the particular sample(s) of subjects must be productive of useful data.

To arrive at satisfactory answers to most of the questions listed, comprehensive studies utilizing a number of approaches to relevant data are almost imperative. The suggested or implied topics at the core of most questions warrant seeking a variety of information from numerous sources. Paradoxical as it may seem, diversification of approaches, sources and information

does not imply that an excessive amount of confounding data will be collected.

Utilization of existing data sources

There seem to be a wealth of information and data resulting from previous investigations that might bear re-analysis, both for some of the questions suggested above and others relevant to the overall topic. In this fashion variety of studies conducted over the past two or three decades might profitably be reviewed for possible common (or diverse) findings, not specifically discerned or stressed in the previous reporting. Another source would be found in the vast amounts of data collected on students in many colleges which have never been subjected to any analyses. Some researchers would shudder that such data, not collected for specific reasons, and without the benefit of an acceptable research design, could be used, or they would doubt that they could be used to a profitable advantage. These reservations are to be respected, but it has been shown that data drawn from the impractical "security" of the files can be used in response to questions for which they were never originally intended.

As one example of particular interest, there would be considerable merit in validating and cross-validating the methods or means of identifying talented and creative people. We are much in need here of confirmation of what is presumably known or hypothesized, both regarding the accurate chracterization and identification and the furtherance of talent. Previously obtained but existing information, for many persons presently performing (e.g., post-college) in a talented or less-talented fashion, would permit the examination of several key questions.

What are some examples of existing data sources? a) In the area of studies generally classified as "child development" a review of and re-analysis

of data from some completed and some ongoing research is suggested as possibly productive. This is certainly the case for the excellent longitudinal studies, started on a sample of infants, conducted under the auspices of the staff at the agency now titled, The Institute of Human Development (University of California, Berkeley).

b) A review and re-analysis of completed and ongoing research on post-adolescent college youth would be possible through the establishment of IBM cards containing identical or similar information. A rather amazing number of studies in the past five to eight years, inclusive of high school and college youth on numerous campuses, have made use of identical or almost identical questionnaire items on topics of academic and general interest.

c) A variety of studies or sources permit the examination of possible answers to selected questions or topics through use of uncommon data. Reference is being made to questionnaire items of dissimilar wording or structure but of relevance to selected topics of particular interest. The liberalism versus conservatism issue demonstrates one topic which can be analyzed through use of quite a variety of specific attitude items employed in numerous studies.

For example, data that could be used in this more unorthodox way, at least for exploratory purposes, might be drawn from recent studies on women students at Vassar and Bennington Colleges, from quite a number of studies in coeducational colleges and from extensive investigations conducted by staffs at the National Merit Scholarship Corporation, the Center for the Study of Higher Education (Berkeley), and the Institute for the Study of Human Problems (Stanford).

To use one topical illustration of the utilization of common or uncommon information, a fairly extensive analysis of the general withdrawal problem of

college women, typical of a great number of institutions, could be approached through results of varying local studies on many campuses. The data taken from application blanks or more complete questionnaires, plus the records available via transcripts, would go a long way in pursuing answers to several important questions.

d) Another possible existing data source, also within the academic context, is centered in women who continued their education in graduate programs. Again, a review and re-analysis of the results of investigations currently becoming available on students at advanced levels appear to be worthy of consideration. A few examples of pertinent data sources here would be found in studies recently reported by staff members at the National Opinion Research Center, the Center for the Study of Higher Education and the Claremont Graduate School.

New data sources and future investigations

The chief and undoubtedly the most valuable sources of important information on talented women and their education will be projects specifically designed to obtain data which will directly facilitate the search for answers to key questions. Serious concerns about developmental and educational aspects of the implied problem(s), that is, the nurturance and furtherance of talent, necessitates consideration of all possible approaches and perspectives. The most profitable of several possibilities is centered in multiple studies of women, at several stages in the maturational sequence and at different educational levels, identifying them for varying amounts and types of talent and collecting information about them and their experiences over a period of time. Needless to say, for the most part, such studies would be no different

at least in execution, than research conducted on talented males.

Several examples of proposed new or future studies are briefly described below.

Retrospective research: The Vassar Alumni studies, conducted by Nevitt Sanford and colleagues and representing one phase of their total program, serve as a model for what might be called retrospective research. With a general pattern drawn from the Vassar studies, attention here will superficially be given to how such an approach can be utilized. This type of research is not suggested as a method of great strength but as one source of valuable information that should not be overlooked.

By identifying or selecting a sample of established, successful college-educated women in the sciences, the arts, education, civic or political activities and a sample of women restricting themselves to the home, a profitable project could be engineered. Such a sample of a selected variety, concentrating a major proportion of their time in the suggested areas, could be studied through the frequently employed questionnaires, inventories and interviews. These sources of information could or would ideally be supplemented, with the permission of the participants, by college records or transcripts. The variety of data, all of it obtained in an after-the-fact fashion except for assessments of present performance, accomplishments and attitudes, would permit some analysis of the developmental patterns leading to productive uses of talent and an examination of related background factors and educational experiences. This approach would probably lead more to hypotheses and future research leads than it would to definitive answers.

In the past two or three years a number of women's colleges have volunteered their cooperation in the conduct of studies on alumni. With a small sample of schools involved, the subgroups of adults suggested above could be drawn from existing alumni files; thus, the academic records and transcript data could be made readily accessible. The central staff of the American Association of University Women has also offered their records and their assistance as a means to arrange for the participation of professional and non-professional women. In fact, the sampling and cooperation of adult women poses no or only a minimal problem in the execution of a major study, as has been shown by the willing participation of many women in a number of survey studies in recent years.

Studies of post-adolescents in the college setting

Possibly the most logical place to conduct future investigations is the college campus environment, especially in those institutions which manage to recruit or select large numbers of high ability, talented students. The comprehensive studies conducted on current students in colleges and universities to date, except for work completed by the National Merit Scholarship Corporation, have not stressed research on the exceptional woman as such. Since the identification of the potentially talented woman can fairly easily be accomplished in the educational context and since a percentage remain immediately available for a number of years, it seems natural to initiate studies of the promotion and training of talent in settings where one would expect them to take place.

The educational agencies, where learning and change are in line with fundamental objectives, also provide the possibilities of experimentation, in that

special programs can be arranged for students differentially identified, and the immediate and future effects of "combining" special students with special experiences thus become variables for analysis. As already discussed (Introduction), the social aspects of the educational environment also permit the immediate firsthand observation and examination of facilitating and inhibiting influences and experiences.

Some of the staff at the Center for the Study of Higher Education(Berkeley) are presently completing a six-year project of the type that would lend itself to an intensive study of the education of the gifted and talented. The objectives of this investigation of men and women in eight institutions were considerably broader than studies on a particular type of student, that is, since a large part of it was concerned with numerous values, attitudes and opinions of students in a variety of educational environments as measured at different times in their college careers.

A chief purpose of this extensive project was to identify the distinguishing characteristics of students as they distributed themselves among different types of institutions and among different subcultures within single institutions. The study also aimed to extend knowledge about social and psychological forces that make for varying degrees and kinds of success in college. Much attention was given to academic achievement and to the development of serious intellectual interests and creative potentials, but the non-academic interests and outcomes of college were also major concerns of the long-range research.

A few of the major questions guiding the research will give some idea about the scope of the project: (1) What are the socio-economic and biographical factors, the relevant personality characteristics, the motivations, the

educational and vocational aspirations of students in the different institutions at the time of admission? (2) What are the important changes which occur in the personalities and motivations of students during the college years in different institutions? (3) What are the major influences which play upon the students in the respective institutions and what are some of the ways in which these are exerted? (4) Are intellectual values and the development of creativity stressed and rewarded generally, or only in limited parts, of the institutions? (5) What are the relationships between the aptitude levels and personality characteristics of the students recruited or selected from a process of "self-selection" and the quality and record of the graduates from respective institutions?

As implied in the questions, the Center staff studied different types and groups of students in the same college environment and similar students across different environments. The expanded project had the major advantage of permitting comparative analyses of students in academic environments of quite different educational philosophies and emphases. The institutions, viewed as organizations, were studied to shed light on the determinants of the "character" of each college and on the differential impact resulting from college traditions, core values, and administrative arrangements.

Besides obtaining data on several classes in the course of two years, the students in one class were assessed several times during the four years. The data were obtained chiefly from students themselves and from records kept by the colleges. This information was gathered through questionnaires (biographical, socio-economic, attitudinal), personality inventories (traits, values,

interests), autobiographies, interviews, and faculty evaluations. To supplement the comprehensive data on the one class studied over four years, a random subsample was drawn for interviewing and testing. Members of these subsamples committed themselves to cooperation and were followed whether they continued in the original college, transferred, or dropped out of college.

The research continued into a fifth and sixth year, especially to determine the placement of graduates in graduate schools or vocational positions and to determine what happened to those identified as the most creative and talented. People in the interview sample were seen again during the fifth year following their matriculation in graduate programs.

Studies of young adults at the graduate and professional level

Some recent survey results, coming from research at the Berkeley Center and the National Opinion Research Center,[4] indicate that at least a percentage of the students who continue their education at advanced levels can be classified as gifted or talented. The actual percentage of the talented is probably greater than the facts would reveal since the majority of undergraduate or graduate institutions fail to make identifications in the area of creativity and talent. But, as already mentioned, many talented young women have withdrawn from college and not completed their undergraduate degree, at least in the typical period falling between the 20th and 24th year of their lives. However, the talented who finish and continue their education, whatever the number would serve as another valuable data source for research.

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4. Miller, Norman. One Year After Commencement, Report No. 93, National Opinion Research Center, University of Chicago, June, 1963.

Many of the talented students going beyond the B.A. program will probably be in music conservatories and schools of art, probably as many as will be continuing in graduate or professional programs. The fact that exceptional young women can be found in quite different institutions (e.g., strictly academic versus schools of art) in one sense enhances the possibilities of research. This is especially true since the considerations given to the abilities and characteristics which come under the definition of talent will vary greatly from one type of institution to another, as will the educational procedures.

The conduct of research at this level need not be belabored here, since the mechanics of observation, data collection and analyses would not be different from that conducted at the undergraduate level. An obvious difficulty, which cannot be readily resolved, is centered in the diversity of talent - and schools alluded to above. Attempts at comparative analyses, however, for samples representing different types of talent being educated in the quite different institutions should not be overlooked because of complicated analytical procedures. It is conceivable that studies in some of the graduate level institutions should also focus on the environmental and program aspects which interfere with or prevent the nourishment of talented behavior. The assumed concern for the individual here, at least in most graduate programs, is more an ideal and a myth than a fact.

A Discerning Look at Data Sources

It has been stated or implied that a certain amount of discernment should be brought to the decisions regarding the data sources to be used. The emphasis was placed chiefly on the fact that the problems and education of talented women

should be studied through use of several or all possible sources but that some are more likely to facilitate a more adequate approach and the collection of more appropriate data. Differences in sources were approached mostly from that standpoint of the age level or educational level. However, the concern for good sources must go beyond this, to the type of institution or the type of students within institutions, whatever the level may be. In other words, the specific samples to be studied, whatever at the age of pre-adolescents or young adults, are also of some real importance. To study any aspect of talented women there obviously must be a supply of talented or potentially talented women. This seems to demand that attention be given to operational definitions and to finding more adequate means of measuring or identifying the talented persons or degrees of talent.

As a single example of the possible difficulties involved, supposing a person plans to evaluate or do research on talented students or on the effect of honors experiences in the five institutions represented in Table 1. The particular talent in this illustration is intellectual disposition and scholarly potential. The students have been categorized into eight subgroups, all representing degrees of intellectual "readiness" or degrees of interest in behaving or performing in a scholarly fashion. These categories should not be confused with amounts of academic aptitude. Very brief definitions for some categories have been listed to give the reader an idea about the overall dimension.

Table 1

If one notes the proportions of women students on the various campuses falling in only the top three categories, an idea may be gained about the different student bodies attending these selective institutions. It is apparent that the percentages of women with high intellectual dispositions vary a great deal. University X and College A have 13.5 and 25 per cent in the top three categories, while in colleges B and D 60 and 68 per cent of the students are in the same categories. These differences have numerous implications for the life and culture on these campuses, and they should be of even greater significance to a person who wants to do research on the students and their education and development.

Research results from several studies, where this means of categorization has been employed, have indicated that the great majority of identified creative students and most of the talented ones have a pattern of scores which place them in one of the top three categories. The obvious implication is that a serious study of the problem at hand could presumably be more readily accomplished in colleges B and D than in University X. But, the decision is not quite that simple. Since the majority of women (85 per cent) in College D, for example, who fell in the top two categories left this chool before the end of the third year, a second consideration must be made. The data available at the Berkeley Center have shown this phenomenon to be true in a good many colleges, that is, a great many of the high calibre women, in the way of talent and creative potential, leave the school in which they first enrolled before completing their degree. And to conclude, this fact alone raises important questions regarding the education of talent in our society.

Conclusion

It probably goes without saying that any researcher can declare "open season" on talented women and study the problems of educating them in any setting or at any level he or she may choose. Along these lines, however, it has been suggested in this presentation that there would be merit in doing research on the problematic aspects in a variety of situations and at various levels, and more than that, it has been encouraged that the approaches to data sources and data collection also be multiple and varied. With study designs and methods ideally being derived from a specific problem and the related objectives, and with the results being contingent upon these and the samples studied, it has also been pointed out that some sources and approaches appear to be much more appropriate for furnishing essential data and provide quicker means to obtaining meaningful answers and understanding.

Table 1

Distribution of Women Students in Five Institutions on a Dimension of "Intellectual Disposition"

Categories (Degree of Intellectual Disposition)	Institutions (Figures in Percentages)				
	University X	Women's College A	Women's College B	Coed College C	Coed College D
1. Broad, intrinsic interests, with strong literary and esthetic perspectives.	0.5	1	5	6	7
2. Intrinsic interests oriented toward dealing with concepts and abstractions.	5	5	22	13	33
3. Intellectuality emphasizing problem solving and rational thinking.	8	19	33	15	28
4. Intellectuality tempered by an achievement orientation and a disciplinary focus.	17	23	24	22	18
5. Interests in academic matters and achievement, but as a means to an end.	22	20	12	19	8
6. Constrained learning orientation with vocational and practical emphases.	33	23	--	19	6
7. Non-intellectual with no literary or esthetic interests.	9	8	2	3	--
8. Anti-intellectual, but not uninterested in tangibles and learning the "practical".	6	1	--	3	--